

**ABSTRACT**

A mechanism for recovering reserved resources in a wavelength-division-multiplexed based photonic burst switched (PBS) network in response to resource non-availability. The PBS network includes edge and switching nodes, which optically communicate information formatted into PBS control and data burst frames. Each PBS data burst frame is associated with a PBS control burst frame. A PBS control burst is sent to reserve resources along a lightpath comprising a concatenation of lightpath segments linked between ingress edge nodes, switching nodes and egress edge nodes. During a subsequent data burst, an unavailable resource is detected at one of the switching nodes. In response, a resource cancellation message (RCM) comprising a control burst is sent to upstream and/or downstream nodes along the lightpath. Upon receiving the RCM, the corresponding resource reservation is cancelled, freeing the network resources for subsequent bandwidth reservations and access.

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